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PTO/SB/05 (05-03)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL <small>(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))</small>		Attorney Docket No. 8540G-000183 (GP-303087)	
		First Inventor Robert L. Fuss	
		Title VARIABLE CATALYST LOADING BASED ON FLOW FIELD GEOMETRY	
		Express Mail Label No. EL623599592US	
APPLICATION ELEMENTS <small>See MPEP chapter 600 concerning utility patent application contents.</small>		ADDRESS TO: Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	
<div style="display: flex; justify-content: space-between;"><div><p>1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) <small>(Submit an original and a duplicate for fee processing)</small></p><p>2. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.</p><p>3. <input checked="" type="checkbox"/> Specification [Total Pages 32] <small>(preferred arrangement set forth below)</small> - Descriptive title of the Invention <input checked="" type="checkbox"/> Specification filed in English - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure</p><p>4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 12]</p><p>5. Oath or Declaration [Total Pages 3] a. <input checked="" type="checkbox"/> Newly executed (original or copy) b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) <small>(for a continuation/divisional with Box 18 completed)</small> i. <input type="checkbox"/> DELETION OF INVENTOR(S) <small>Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</small></p><p>6. <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76</p></div><div><p>7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)</p><p>8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> paper c. <input type="checkbox"/> Statements verifying identity of above copies</p></div></div>		ACCOMPANYING APPLICATIONS PARTS	
		<p>9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s))</p> <p>10. <input type="checkbox"/> 37 C.F.R. §3.73(b) Statement <input type="checkbox"/> Power of Attorney <small>(when there is an assignee)</small></p> <p>11. <input type="checkbox"/> English Translation Document (if applicable)</p> <p>12. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations</p> <p>13. <input checked="" type="checkbox"/> Preliminary Amendment</p> <p>14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <small>(Should be specifically itemized)</small></p> <p>15. <input type="checkbox"/> Certified Copy of Priority Document(s) <small>(if foreign priority is claimed)</small></p> <p>16. <input type="checkbox"/> Request and Non Publication under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.</p> <p>17. <input checked="" type="checkbox"/> Other: <u>Petition to Accept Color Drawings</u></p>	
<p>18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:</p> <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> Continuation <input type="checkbox"/> Divisional <input type="checkbox"/> Continuation-in-part (CIP)</div><div>of prior application No: _____ / _____</div></div> <p>Prior application information: Examiner _____ Group / Art Unit: _____</p> <p>For CONTINUING or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference. The incorporation <u>can only</u> be relied upon when a portion has been inadvertently omitted from the submitted application parts.</p>			
17. CORRESPONDENCE ADDRESS			
<input checked="" type="checkbox"/> Customer Number or Bar Code Label		27572	
		<small>(Insert Customer No. or Attach bar code label here)</small>	
<small>or <input type="checkbox"/> Correspondence address below</small>			
Name	Harness, Dickey & Pierce, P.L.C.		
Address	P.O. Box 828		
City	Bloomfield Hills	State	MI
		Zip Code	48303
Country	United States of America	Telephone	248-641-1600
		Fax	248-641-0270
Name (Print/Type)	Linda M. Deschere	Registration No. (Attorney/Agent)	34,811
Signature			Date 3/20/03

17510 U.S. PTO 10-70025-7



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**FEE TRANSMITTAL
for FY 2004**

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 1220**Complete if Known**

Application Number 8540G-000183 (GP-303087)

Filing Date

First Named Inventor Robert L. Fuss

Examiner Name

Art Unit

Attorney Docket No. 8540G-000183 (GP-303087)

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit
Account
Number

07-0960

Deposit
Account
Name

General Motors Corporation

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee
to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	770
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 770)

2. EXTRA CLAIM FEES

Total Claims	26	-20 **	=	6	X	18	=	108
Independent Claims	5	-3 **	=	2	X	86	=	172
Multiple Dependent					X		=	0

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	86	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	86	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$ 280)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	40
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) Petition to Accept Color Drawings

130

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 170)

SUBMITTED BY

Complete (if applicable)

Name (Print/Type)

Linda M. Deschere

Registration No. Attorney/Agent)

34,811

Telephone

248-641-1600

Signature

Date

3 NOV 03

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: Not yet assigned
Filing Date: Herewith
Applicant: Robert L. Fuss et al.
Group Art Unit: Not yet assigned
Examiner: Not yet assigned
Title: VARIABLE CATALYST LOADING BASED ON FLOW
FIELD GEOMETRY
Attorney Docket: 8540G-000183 (GP-303087)

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO ACCEPT COLOR DRAWINGS

Sir:

The above-referenced invention is directed to a variable catalyst loading based on a flow field geometry for a fuel cell, as well as a method of controlling reactions in a fuel cell. In order to determine the localized areas of the electrode that require a variable catalyst loading based on the bipolar plate material and flow field geometry, the anode and cathode flow field plates of the bipolar plate are electrically separated from one another with an array of resistors between such anode and cathode flow field plates. Then, the distribution of the current leaving an entire fuel cell is determinable by the array of resistors across the entire cross-sectional area of the cell. Given the resistance of each resistor being a known value, the current passing through a

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particular resistor is determined by measuring the voltage drop across such resistor. In this manner, the current produced by a membrane electrode assembly (MEA) is determined as a function of position, by measuring the voltage drops across each resistor in the array. In other words, current as a function of position across the MEA, is monitored.

Examples where the current distribution of an electrode was measured are depicted in Figures 11A and 11B. Hot spots, that is areas of increased electrochemical activity and current density, and cool spots can be seen throughout each of the figures. As seen in the figures, however, there are varying levels of current density throughout the surface of the figures and, in order for one skilled in the art to fully appreciate and acknowledge the effects of the present invention, color drawings are required. As such, in accordance with 37 C.F.R. § 1.84(2), the fee set forth in § 1.17(h); three (3) sets of color drawings; and a black and white photocopy that accurately depicts, to the extent possible, the subject matter shown in the color drawing are submitted herewith.

Favorable consideration of this petition is respectfully requested.

Respectfully submitted,

Date: 3 NOV 03

By: 
Linda M. Deschere
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